ABSTRACT OF THE DISCLOSURE

An aspect of the present invention is directed to a system for use in oil well drilling applications. The system includes a scintillator material having a cubic garnet host and praseodymium distributed within the host. The scintillator material emits ultraviolet radiation in response to stimulating gamma ray radiation. A radiation detector optically coupled to the scintillator detects the emitted ultraviolet radiation. Another aspect of the invention is a method for detecting oil. A radiation detector is optically coupled to a scintillator material having a cubic garnet host and praseodymium distributed within the host, wherein the praseodymium acts as an activator, and wherein the scintillator material emits ultraviolet radiation in response to stimulating gamma ray radiation. The detector and the scintillator material are lowered below the surface of the earth, and ultraviolet radiation emitted by the scintillator material in response to stimulating gamma ray radiation reflected by hydrogen bearing compounds indicating the presence of oil is detected by the detector.